

In re application of NOVIK ET AL.
Serial No. 09/517,895

Listing of the Claims:

1-10. (canceled)

11. (currently amended): A computer-readable medium having computer-executable instructions, comprising:

receiving notification of an occurrence of an event; and

traversing an event filtering tree, composed from two or more event filtering trees by providing an OR node with children added from a merger of child nodes of the trees when such child nodes may be successfully combined and with children added from each child node of the trees when such child nodes cannot be successfully combined, to determine at least one query satisfied by the event, including, reaching an the OR node, branching to a child node of the OR node, performing a first evaluation of the child node against information of the event, branching to a leaf node based on the result of the first evaluation and obtaining query information from that leaf node, returning to the OR node, branching to another child of the OR node, performing a second evaluation of the other child node against information of the event, branching to a leaf node based on the result of the second evaluation and obtaining query information from that leaf node, and using the query information obtained from each leaf node that was reached to determine at least one subscriber to notify of the occurrence of the event.

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12. (original): The computer-readable medium of claim 11 wherein the query information in each leaf node corresponds to registered subscribers.

13. (original): The computer-readable medium of claim 11 wherein the query information in each leaf node identifies at least one query satisfied thereby, and wherein using the query information includes determining which subscribers correspond to each satisfied query.

14. (original): The computer-readable medium of claim 11 wherein the query information in each leaf node includes true or false information corresponding to a set of at least one query.

15. (original): The computer-readable medium of claim 11 wherein performing a first evaluation of the child node against information of the event includes comparing an event parameter value against a data point.

16. (original): The computer-readable medium of claim 11 having further computer executable instructions for, receiving a set of queries, and constructing the event filtering tree therefrom.

17. (original): The computer-readable medium of claim 16 wherein the set of queries is received from an event subscriber.

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18. (original): The computer-readable medium of claim 16 wherein the set of queries is received from an event provider.

19. (currently amended): A computer-readable medium having stored thereon a data structure, comprising:

a first child node representing a first event parameter, the first child node being constructed from a merger of child nodes of two or more event filtering trees when such child nodes may be successfully combined and being constructed from each child node of the event filtering trees when such child nodes cannot be successfully combined;

at least two leaf nodes under the first child node, each leaf node including information corresponding to at least one query;

a second child node representing a second event parameter, the second child node being constructed from a merger of the child nodes of the event filtering trees when such child nodes may be successfully combined and being constructed from each child node of the event filtering trees when such child nodes cannot be successfully combined;

at least two leaf nodes under the second child node, each leaf node including information corresponding to at least one query;

an OR node; and

information indicating a parent and child relationship between the OR node and the first node, and a parent and child relationship between the OR node and the second node, wherein the first node is branched to by the OR node

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during a tree traversal, and the first node selectively branches to one of the leaf nodes thereunder based on an evaluation of actual event data to obtain first query information therefrom, and wherein the second node is branched to by the OR node during a tree traversal, and the second node selectively branches to one of the leaf nodes thereunder based on an evaluation of actual event data to obtain second query information therefrom.

20. (original): The computer-readable medium having stored thereon the data structure claim 19 wherein the first child node includes a plurality of data points.

21. (currently amended): A computer-readable medium having stored thereon a data structure, comprising:

- a parent node having an boolean operator;
- at least two nodes that are children of the parent node, each of the children having an event parameter, and each of the children being constructed from a merger of child nodes of two or more event filtering trees when such child nodes may be successfully combined and being constructed from each child node of the event filtering trees when such child nodes cannot be successfully combined; and
- at least two leaf node for each of the children, the leaf node having a boolean value.

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22. (previously presented): The data structure of claim 21 wherein the boolean operator comprises OR.

23. (previously presented): The data structure of claim 21 wherein the event parameter comprises a different event parameter for each child of the parent.

24. (previously presented): The data structure of claim 21 wherein the boolean value of the leaf node comprises a character for indicating that another branch of the parent node needs to be traversed for evaluation.

25. (previously presented): The data structure of claim 21 wherein the event parameter includes a plurality of values.

26. (currently amended): A method for filtering events comprising:
receiving notification of a plurality of events;
traversing a composite event filtering tree created using a boolean constructor for determining at least one query satisfied by the events, the composite event filtering tree having an OR node with children added from a merger of child nodes of two or more event filtering trees when such child nodes

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may be successfully combined and with children added from each child node of the trees when such child nodes cannot be successfully combined; and
notifying at least one subscriber that the query was satisfied.

27. (previously presented): The method of claim 26 wherein traversing the composite event filtering tree comprises visiting a parent node having a boolean operator.

28. (previously presented): The method of claim 26 wherein traversing the composite event filtering tree comprises branching from a parent node having a boolean operator to a child node having an event parameter.

29. (previously presented): The method of claim 28 wherein traversing the composite event filtering tree comprises branching from a child node having an event parameter to a leaf node having a boolean value.

30. (previously presented): The method of claim 29 wherein traversing the composite event filtering tree comprises comparing a received event value to a plurality of values represented by the event parameter of the child node for branching to a leaf of the child node.

31. (previously presented): The method of claim 29 wherein traversing the composite event filtering tree comprises determining that the

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boolean value of the leaf node indicates that another branch of the parent node needs to be traversed for further evaluation of the query.

32. (previously presented): A computer readable medium having computer-executable instructions for performing the method of claim 26.